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THE MONIST.

THE REALITIES OF EXPERIENCE.

GREAT IN MANY WAYS, Huxley was perhaps greatest as an essayist. To this end he applied three conspicuous gifts,—an eye for essentials, lucidity of thought, and style. Original research had provided him with a solid basis of first-hand knowledge in his special branch of science. Wide reading and a tenacious memory furnished him with abundant material for apt and forcible illustration. He knew the public whom he addressed and felt its pulse with admirable skill. He had a mission and a message. He stood forth as the champion of science and of a negative philosophy founded thereon. It is one aspect of that philosophy I propose to consider.

Towards the close of the essay on Descartes's *Discourse on Method* Huxley said :¹

"The reconciliation of physics and metaphysics lies in the acknowledgment of faults upon both sides; in the confession by physics that all the phenomena of nature are in their ultimate analysis known to us only as facts of consciousness; in the admission by metaphysics that the facts of consciousness are, practically, interpretable only by the methods and the formulæ of physics; and, finally, in the observance by both metaphysical and physical thinkers of Descartes's maxim—assent to no proposition the matter of which is not so clear and distinct that it cannot be doubted."

In two subsequent essays, and elsewhere incidentally, Huxley interpreted and fully accepted the Berkeleyan analysis of sensation

¹ *Collected Essays*, I. p. 194.

and perception. Starting with the prick of a pin, which subtly transforms itself on the next page into a needle, and passing to the smell, taste, and visible appearance of the orange, without which, as part of his stock in trade, no one who has a due respect for tradition would attempt to deal with the problem, he leads up to the position which Locke thus summarised :¹

"Flame is denominated hot and light; snow, white and cold; and manna, white and sweet, from the ideas they produce in us; which qualities are commonly thought to be the same in these bodies that those ideas are in us; the one the perfect resemblance of the other as they are in a mirror; and it would by most men be judged very extravagant if one should say otherwise. And yet, he that will consider that the same fire that at one distance produces in us the sensation of warmth, does at a nearer approach produce in us the far different sensation of pain, ought to bethink himself what reason he has to say that his idea of warmth which was produced in him by the fire, is actually in the fire; and his idea of pain which the same fire produced in him in the same way, is not in the fire. Why are whiteness and coldness in snow, and pain not, when it produces the one and the other idea in us; and can do neither but by the bulk, figure, number, and motion of its solid parts?"

Having thus, in company with Locke, disposed of any claim to external reality which these so-called "secondary qualities" may be supposed to possess, Huxley then proceeds to apply the Berkeleyan logic to the "primary qualities." Locke had said :²

"The particular bulk, number, figure, and motion of the parts of fire and snow are really in them, whether any one's senses perceives them or not, and therefore they may be called real qualities because they really exist in those bodies; but light, heat, whiteness or coldness are no more really in them than sickness or pain is in manna. Take away the sensation of them; let not the eyes see light or colors, nor the ears hear sounds; let the palate not taste nor the nose smell; and all colors, tastes, odors, and sounds, as they are such particular ideas, vanish and cease, and are reduced to their causes, i. e., bulk, figure, and motion of parts."

But as Huxley, interpreting Berkeley, goes on to show, a rigorous extension of the logic which disposes of the secondary qualities, forces us to admit that the primary qualities are in like condemnation. So that the final upshot is this :

¹ Quoted in *Collected Essays*, Vol. VI. pp. 253-254.

² Quoted Vol. VI. p. 255.

"If the materialist affirms that the universe and all its phenomena are resolvable into matter and motion, Berkeley replies: 'True; but what you call matter and motion are known to us only as forms of consciousness; their being is to be conceived or known; and the existence of a state of consciousness, apart from a thinking mind, is a contradiction in terms.' (P. 279.)

"Our sensations, our pleasures, our pains, and the [relations of them make up the sum total of positive, unquestionable knowledge. We call a large section of these sensations and their relations matter and motion; the rest we term mind and thinking; and experience shows that there is a constant order of succession between some of the former and some of the latter." (P. 318.)

Now, when having closed the book and looking up, one sees a bunch of purple violets, delicately formed, sweetly scented, in the vase out there on the table, one is tempted to wonder whether, in following the lead of Locke and Berkeley, the high priest, or if it be preferred the proctor, of modern science, took the line most suitable for the end he had in view. That end was first the delimitation of scientific knowledge, and secondly the disclosure of the foundations on which that knowledge is securely based. Both the range and the basis may be summarised, on the principles he adopts, in the single word Experience. Beyond experience we are not to stray; and the clear teachings of experience we are to trust with absolute confidence.

"The memorable service rendered to the cause of sound thinking by Descartes," said Huxley, "consisted in this: that he laid the foundation of modern philosophical criticism by his inquiry into the nature of certainty. It is a clear result of the investigation started by Descartes, that there is one thing of which no doubt can be entertained, for he who should pretend to doubt it would thereby prove its existence; and that is the momentary consciousness we call a present thought or feeling; that is safe, even if all other kinds of certainty are merely more or less probable inferences." (VI. 65, 6.)

For my own part I confess that when, having closed the book, or awakened from the metaphysical reverie it has suggested, I see before me the bunch of violets, nothing in the whole range of my experience appears to be more certain and clear than the reality *in all its details*, of this present item of immediate perception. If I am to accept the Cartesian maxim, here and now is my opportunity. Suppose that a physicist at my side undertakes to show that

what I call the color of the violets is explicable in terms of matter and motion ; I listen with respectful attention. But, granting that every step of his argument conforms strictly to the Cartesian canon, it is none the less true that every step takes us farther from the particular reality of immediate experience from which we started. No doubt, our path may lead us to new realities of physical thought and inference. That I do not deny ; what I deny is that our journeying from the Land's End to Berwick-on-Tweed has altered one whit the reality of our experiences at the outset of our journey. And if the mental philosopher then offers to be my guide through the country of Hume, I am delighted to be his companion right up to John o' Groat's. I rejoice to travel in such excellent company. But when we get there, when not only the Land's End violets but the matter and motion of Berwick have faded in the indefinite distance, and become but pleasant memories, it appears to me that though we have taken many more steps and journeyed further from our starting-point, and though what we see at John o' Groat's (with a good pair of metaphysical spectacles) may be quite clear and real, yet,—there is our bunch of violets on the table. We have passed from the realities of immediate perception to the realities of physics and thence to the realities of Berkeleyan thought : but don't try and persuade us that these realities of abstraction carry with them more certitude than the immediate experience with which we started. I profess that, being but a plain man, the reality of my experience, as I look at the bunch of violets, carries with it the very maximum of conviction. And it appears to me that, on the principles of Descartes's himself, we should substitute for his celebrated *Cogito ergo sum*, concerning which as it stands very pretty arguments have arisen, the indisputable axiom *Experientia est*.

There are some, however, who would seek to undermine the foundations of this belief. Mr. Balfour, for example, interprets the teaching of Naturalism as follows :

"Whereas common sense tells us that our experience of objects provides us with a knowledge of their nature which so far as it goes, is immediate and direct, science informs us that each particular experience is itself but the final link in a long chain of causes and effects, whose beginning is lost amid the complexities of

the material world, and whose ending is a change of some sort in the mind of the percipient. It informs us further, that among these innumerable causes, the thing 'immediately experienced' is but one; and is, moreover, one separated from the 'immediate experience' which it modestly assists in producing by a very large number of intermediate causes which are never experienced at all. . . . The fact that even the most immediate experiences carry with them no inherent guarantee of their veracity is, however, by far the smallest of the difficulties which emerge from a comparison of the causal movement from object to perception, with the cognitive leap from perception to object. . . . For we need only to consider carefully our perceptions regarded as psychological results, in order to see that, regarded as sources of information, they are not merely occasionally inaccurate, but habitually mendacious. We are dealing, recollect, with a theory of science according to which the ultimate stress of scientific proof is thrown wholly upon our immediate perceptions of objects. But nine-tenths of our immediate experiences of objects are visual; and all visual experiences, without exception, are, according to science, erroneous. As everybody knows, color is not a property of the thing seen: it is a sensation produced in us by that thing. The thing itself consists of uncolored particles, which become visible solely in consequence of their power of either producing or reflecting ethereal undulations. The degrees of brightness and the qualities of color perceived in the thing, and in virtue of which alone any visual perception of the thing is possible, are therefore according to optics, no part of its reality, but are feelings produced in the mind of the percipient by the complex movements of material molecules, possessing mass and extension, but to which it is not only incorrect but unmeaning to attribute brightness or color."¹

Mr. Balfour would seem to have written this near Berwick-on-Tweed. But we must remember that he is merely interpreting what he assumes to be the creed of science. According to this creed, thus interpreted, our experiences at the Land's end were naught but an illusory dream. I refuse to admit the physical scenery of this interpretation, real enough in its proper place, as a substitute for the equally real scenery of direct perception. The Land's end of immediate experience from which Mr. Balfour starts is a green tree standing in the next field. And I claim that this green tree is not a whit less real than "the complex movements of material molecules, possessing mass and extension" which come into view at Berwick. We are not dealing at present, remember, with any of the inferences which may be drawn from the original expe-

¹ *Foundations of Belief*, pp. 108, 111, 112.

rience,—with any judgment about the object. These may be true or false without affecting one jot the reality of the experience as such. We are not regarding the experience as a message. It may be true that, as Mr. Balfour says :

“Anything which would distribute similar green rays on the retina of the eyes in the same pattern as that produced by the tree, or anything that would produce a like modification of the cerebral tissues, would give an experience in itself quite indistinguishable from the experience of the tree, although it [nay, Sir, not it but our interpretation of it] has the unfortunate peculiarity of being wholly incorrect. The same message would be delivered, in the same terms and on the same authority, but it would be false.”

Be it true or false, however, as a message,—as an experience it is unquestionably real. We either have it or do not. If we have it, it is real in the only intelligible meaning of this much abused word as applied in the affairs of practical life. We have established our asylums for those whose terribly real experiences habitually deliver false messages, that is to say messages which are for you and me and other normal people unverifiable and incorrect. It is of course open to some one to elaborate the thesis that we are all mad, and that this world in which we live is a glorified Bedlam. If so all we can do is to clap him into an asylum for the sane, and treat him kindly. It is on the validity of normal experience that we must take our stand.

Perhaps it may seem somewhat arbitrary to select certain experience, label it normal, and assert that it is on this selected reality that we must take our stand. The distinction, however, is between reality and validity. All experience, normal and abnormal alike, is real ; but it is not all of the same social validity. If a lad come in on a dark night with blanched cheeks and trembling limbs saying that he has seen a ghost in the lane, his experience was real—appallingly real—but it lacks social validity. He stoutly contends that if you dare face it you too will see the spectre standing by the bank. Curiosity impels you to go ; and you find a sheet of the *Daily Telegraph* blown by the wind against the hedge. The experience was real, but it was falsely interpreted. The dagger Macbeth saw was for him as real as immediate experience could make

it : but the phantom of his overwrought brain had no social validity, since for others there was but vacant air. The value of experience is as the guide to action. It generates anticipations ; and only in so far as these anticipations are verifiable by others is it not only real but valid.

This leads us on to our next point. What is true of *an* immediate experience is true of any given series. Their reality lies in their being experienced. There is the tree in yonder green field. If I walk to it, touch it, inhale the fragrance of its blossoms, or, later in the season, enjoy the flavor of its fruit ; if I run a splinter from it into my finger, or foolishly knock my head against its boughs ; if I measure its height or calculate its value ; in all of this there is a sequence of experiences, each of which is real for me just in so far as it is an actual experience. And we are able to guide our actions and walk more or less sure-footedly in the paths of experience, just because, as experience itself shows, the realm we have been exploring is an orderly realm,—orderly not only for me but for you. For you and I can compare notes as to our experience, whence emerges natural knowledge.

All of this seems, no doubt, to many very elementary and trite. We know perfectly well, it may be said, that out there in the field is a tree ; that if one is near enough one can see it, and if one goes still nearer one can handle it and taste its fruits. There is no need to tell us that the orderly sequence of experience is the result of two quite independent things,—our consciousness and the tree. That is mere common sense. But it must be remembered that common sense is a subtle compound of practical experience and crude metaphysics. The assumption that the unity of experience is the product of two independent factors, the tree and consciousness, is a metaphysical assumption, and one which leads to all sorts of difficulties. It forces you to divide the experience between the two existences. You will perhaps begin, with Locke, by admitting that the color, and the sweetness, and the pain are in your consciousness, while matter and extension are in the tree. Then you may be perplexed, like readers of Huxley, with horrid doubts about the matter and extension as they exist independently

of the percipient mind. And you may end with the conviction that "what we are conscious of as properties of matter, even down to its weight and resistance, are but subjective affections produced by objective agencies which are unknown and unknowable;" and may be enfolded at last with the lambs that Mr. Herbert Spencer feeds with the metaphysical grass of transfigured Realism. Which Heaven forbid! for the unknowable is innutritious provender.

But surely, the tree as object and the mind as subject are distinguishable with Cartesian clearness. Distinguishable, yes—like the scent and color of my violets. But it does not follow that they are separable. In experience they are inseparable; and if we postulate independence, we do so on metaphysical grounds. Let us go back to the immediate experience which I describe as a green tree in the field. This is our starting point. Now what we do is to analyse this bit of practical experience. And as the result of our analysis we distinguish in thought what philosophers have agreed to call an objective aspect, the green tree, and a subjective aspect, our perception. In experience the two are inseparable. And a system of science which is founded on experience should frankly accept its limitations and leave outstanding problems to metaphysics. If we do this; if we hold firmly, as students of science, to the teachings of experience and refuse, within the sphere of science, to go beyond them; if we be careful to avoid the pernicious fallacy, that what is distinguishable in analysis is necessarily separable in existence; then our way is comparatively clear and simple. Looking at our experience in its objective bearings, we elaborate a system of natural and physical science; looking at it in its subjective bearings, we elaborate a co-ordinate system of mental science. The question whether the color is in the tree or in our mind, admits of no answer from science, just because it is wrongly stated. It is formulated in terms of the crude dualistic metaphysics of common sense. Asked in an intelligible form for science, it admits of a perfectly intelligible answer. The color is certainly part of the objective aspect of vision and has to be investigated by natural and physical science; it, as unquestionably, has a bearing on the subjective interpretation of experience, and from this point of

view falls within the province of the psychologist. The distance of the tree, its size, its value, fall, in like manner, within the scheme of objective interpretation, from one point of view, and within the scheme of subjective interpretation from the other; and that because as items of experience they are susceptible of this mode of analysis.

For science both aspects, objective and subjective, are absolutely co-equal and co-ordinate in the matter of reality. It is just as absurd to deny objective reality as to deny the reality of experience; the one implies the other. Science, I repeat, takes its stand on this reality of experience; polarises it under the magnetic influence of thought; terms all that falls within the objective purview the natural and physical universe, and all that falls under the subjective analysis the world of mind; regarding both as co-ordinate realities, or, rather, coequal aspects of the basal reality of experience.

But it may be said that the immediate experience of the bunch of violets, or the green tree in the field, carries with it the ineradicable conviction that the object is independent of the subject. In what sense independent? If we cross-question practical experience, apart from the metaphysics of common sense, does it assert with conviction anything beyond the range of actual or possible observation or of verifiable inference founded thereon? I cannot discover that it does. Experience begets expectations, and the reiterated verification of such expectations does carry with it a sort of conviction. I am convinced that if I reach forth my hand to the violets and carry them to my nose, I shall experience their fragrance. I do not wish in any degree to minimise the force and value of such convictions. They are our guides in the practical conduct of life. Without them we could make no advances in science. At the same time these expectations *may be* misleading. The violets may be artificial and have been placed on my table as a practical joke. Or they may be dog-violets. The order of certainty—if the expression be allowed—of the immediate experience, as such, is different from that of any expectation, no matter how well founded. *Experientia*

erit cannot be asserted with the same absolute confidence as *Experientia est*.

Now, so far as I can ascertain, practical knowledge, apart from metaphysics, never goes beyond the assertion that experience, actual or possible, is, was, or will be, of such and such a kind. It asserts on the evidence of Geology that *Ichthyosauri* lived in the seas of Liassic times, and that, had men been living then, there would have been such and such experiences. It asserts that in the experience of the future, as in that of to-day, sunrise and sunset will continue so long as the solar system shall endure. All past history, all anticipations for the future, it presents in the form of actual or possible experience. But if we ask questions which do not admit of answers couched in terms of experience, inquiring, for example, what will be the state of matters if experience, actual or possible, is from the nature of the case excluded, then common sense either refuses to give any reply, or has resort to metaphysical assumptions. It is apt to assume, for instance, that because *my* experience, say of the bunch of violets, is independent of you, and *yours* of me, and *ours* of some actual or possible third person, the object, as such, is independent of *any* experience. That there may be something independent of any experience, I am not concerned here either to assert or to deny. Such assertion or denial must be based on metaphysical grounds altogether beyond the domain of actual observation. For the practical affairs of life the word "object" indicates that which is given in sensory experience. Begotten thus of experience, the object should resent any doubts which may be thrown on its legitimate parentage. I cannot believe that common sense ever seriously means to cast this slur on the objects of perception. It asserts that under given conditions of experience you or I, or any one else, may see and handle the violets—that as objects they are independent of any of us severally, not surely that they exist, as such, independently of all experience.

But is not this complete independence implied in our words and forms of speech? Not necessarily. The function of language is to enable us to communicate to each other, or to record, the results of experience and of thought. Their implications are either

practical or metaphysical. Absolute independence is a metaphysical implication, and differs from that practical independence which is a matter of common experience. If some one tells me that there are mile-stones on the Dover road, and that if I care to journey thither I shall see them, he expresses first a fact of experience, and secondly an anticipation based thereon. It is true that I or any one else can verify my informant's anticipation. This shows that the object is independent of merely individual experience, but it does not show, nor does our language necessarily imply, that, as objects, the mile-stones are independent of all experience. And if it be said that some thing, at any rate, does exist independently which generates or is the occasion of the several experiences of those who journey along the Dover road, I am certainly not prepared to deny the statement ; but it belongs to the domain of metaphysics, not to that of practical knowledge. To the question, What is the cause of the experience in which you trust? practical knowledge, apart from metaphysics, replies : That is outside my province. What information I have is entirely based on observation. I can offer no opinion on matters which lie behind and beyond it.

I conceive that science, in so far as it is founded on practical experience, should make precisely the same answer. No doubt science has carried its inferences much further afield. It deals in greater degree with generalisations and employs more largely the symbolism of abstraction. It soars on the wings of thought to more lofty and difficult heights. For it must not be forgotten that the realm of experience includes not only the domain of the senses, but all that can logically, with the Cartesian canon in view, be founded thereon.

" Indeed the domain of the senses," as Tyndall said, " is almost infinitely small in comparison with the vast region accessible to thought which lies beyond them. From a few observations of a comet when it comes within the range of his telescope, an astronomer can calculate its path in regions which no telescope can reach ; and in like manner, by means of data furnished in the narrow world of the senses, we make ourselves at home in other and wider worlds, which can be traversed by the intellect alone."

Just as the trigonometrical survey of a whole continent may be constructed from a single accurately measured base-line, so may we construct the vast extra-sensible world of science from the accurately measured base-line of sensible experience. Science does but indefinitely prolong and extend the process of inference which common sense habitually employs in dealing with daily affairs. And only by oft-repeated reference to the touchstone of experience is the gold of valid inference distinguishable from the false coinage and spurious notes of fallacy.

There is, however, another feature of scientific knowledge which is perhaps more frequently overlooked. It is founded on selected experience. Although from the subjective aspect abnormal experience forms an important field for investigation, yet, in its objective aspect, science is forced to exclude it altogether. And not only is abnormal experience necessarily ignored (for it has no social validity), but all observations which fail to reach the standard of accuracy and exactness which science imposes, are for that reason excluded. There is also a tendency, wise in the main but apt to be arbitrary, to deny the validity of all such experience as fails to conform to the existing conclusions of science—to ignore whatsoever seems to be discordant with our scheme of scientific interpretation. This may perhaps be regarded as the besetting intellectual sin of the narrow-minded devotee of science. It is a defect which time and increased wisdom will remedy. The ideal towards which we work should be that all sane and accurate experience shall find its appropriate place in the system of scientific knowledge.

The result, then, of the analysis of this extended system founded and built on experience, is to polarise it into objective and subjective, one in essence but diverse in aspect, of neither of which do we know anything apart from the other, both of strictly co-ordinate reality within the system. Under the objective aspect we classify all that we learn from astronomy, geology, biology, physics, and chemistry, concerning the material universe. The planets of the solar system, the rocks of the carboniferous age, the delicate pencillings on the guinea-fowl's plumage, the chasing on

the minutest diatom, are in no sense less real, for experience, than the orderly molecular or atomic evolutions of which the physicist or the chemist has to tell us. Men of science who are concerned with the objective take for granted the subjective aspect which all experience, as such, must present. That they leave to those whose business it is to deal with our knowledge from this point of view—to the psychologists, who regard the whole realm of experience as that which affords data for the understanding of the orderly sequence of states of consciousness. Psychologists take cognisance of the objective, not for its own sake, but as inevitably throwing light on those conscious processes which they have to explain in terms of their special science. Thus by an organised division of labor naturalists and psychologists extend the systematic survey, each from his selected point of view ; and thus by analysis are disentangled the strands which constitute the intricately-woven tapestry of human experience ; thus, too, in synthetic interpretation, does the student of history, whether of our own times or of a more distant past, utilise all that is rendered visible from each standpoint, and combine actions and motives in one dramatic representation.

Let us, however, in surveying the edifice of human knowledge, be careful not to lose sight of the foundations. These are the common experiences of daily life—the data afforded by observation. Just in so far as these are real and valid, will the superstructure have reality and validity. Any system of thought which conveys the notion that they are tainted with unreality is false to the principles of experience and of science. The corner-stone of the whole building has inscribed upon it the axiom *Experientia est*. If my experience of the bunch of violets be not real and trustworthy down to its minutest and apparently most trivial detail, then there is nothing in the vast system of scientific knowledge which can resist the solvent acid of philosophical scepticism, leaving but the phantom dregs of the Unknowable.

And so we come back to Huxley's line of argument founded on the Berkeleyan analysis. What shall we say of it? Is it true or false? Shall we evade the question and answer indirectly that

it is ill-chosen? Or may we not take refuge in an oxymoron? No one was more desirous than Huxley of doing honor to science. But in these Berkeleyan essays

"His honor rooted in dishonor stood
And faith unfaithful kept him falsely true."

If he wished to make a desert of the Unknowable so that the divine Astræa of philosophic peace should commence her blessed reign, he adopted a strangely ill-advised method of realising his desires. Hear again the words in which he summarises his conclusions :

"Our sensations, our pleasures, our pains, and the relations of these make up the sum total of positive, unquestionable knowledge. We call a large section of these sensations and their relations matter and motion ; the rest we term mind and thinking ; and experience shows that there is a constant order of succession between some of the former and some of the latter."

I venture to deny the validity of this division into two separate sections, material and mental. The body of experience is one and homogeneous, and *every item* presents to analysis two aspects. But let that pass. The passage is open to a more serious criticism. Bearing in mind the way in which Huxley hunts down the objectivities, hounding first the secondary qualities, and then those once termed primary, until they take refuge in the safe haven of the subjective, is it unjust to paraphrase his conclusions as follows? Only the subjective aspect of experience can make good at the bar of reason its title to reality : the objective universe is at best but an orderly mental phantasmagoria.

Now this conclusion came naturally enough from the lips of a professed mental philosopher like Berkeley. It was indeed a one-sided conclusion. It was elaborated in the subjective field ; but it exercised in its own proper sphere no little influence on the development of modern philosophic thought. It established triumphantly the subjective aspect as present in all experience throughout its whole range. And if in its vivid realisation of this aspect it seemed to minimise the value of the correlative objective aspect, the fault may well be condoned—in Berkeley. With Huxley the case is different. What was seemly, nay admissible, in the Bishop

of Cloyne may scarcely befit the proctor of modern science. I have a sincere admiration of Huxley's work and genius. But when, having discoursed with enviable lucidity on the physical basis of life and mind, he finally merges the object in the subject, he is no longer true to the flag of experience under which he professed to serve. The following words are the utterance of a deserter: "If I say that thought is a property of matter, all that I can mean is that actually or possibly the consciousness of extension and that of resistance accompany all other sorts of consciousness." The idealism of the explanation is as absurd as the materialism it professes to explain. Does any true soldier of science believe that his captain here spoke wisely and well? I for one must protest, even if I be drummed out of the service for sowing the seeds of disaffection to a superior officer whose memory is justly revered. But before I am ignominiously stripped of my uniform I must repeat that the objective and the subjective are the co-ordinate products of the analysis of experience, and that the one is as real (and real in precisely the same sense) as the other. If we polarise the experience of a bunch of flowers into objective violets and subjective states of consciousness, we cannot doubt the reality of either without deny the reality of the experience thus polarised.

And what good purpose, it may be asked, can be served by this discussion? The question at issue is of very little if any practical moment. Notwithstanding all that the Bishop of Cloyne and the philosopher of Ninewells have written, in spite of the arguments of their spiritual progenitor Locke and their nineteenth-century interpreter Huxley, men of science have quietly and steadily pursued their researches, and the general public have accepted and profited by their labors without misgivings. But if we found our knowledge on experience, we must be prepared either to hold Huxley's position or to abandon it and occupy more advantageous ground. No doubt in times of peace we may be content to retain the position in a merely formal manner, without considering its strength or its weakness. It will then afford no little gratification to onlookers when in times of attack the enemy's shot destroy our crumbling walls and force us to beat a retreat. If one may judge from the

comments of the press, this was the attitude of many, when Mr. Balfour opened a vigorous and well-directed fire on what seemed to the field-glasses of the attacking party the chief positions of naturalism.

Choosing his ground with all the skill of a trained dialectician, and selecting for his most concentrated fire a position in itself inherently weak, Mr. Balfour affords to onlookers a view of some very pretty artillery practice :

"Naturalism (as commonly held), he says, is deeply committed to the distinction between the *primary* and the *secondary* qualities of matter ; the former (extension, solidity, and so forth) being supposed to exist as they are perceived, while the latter (such as sound and color) are due to the action of the primary qualities upon the sentient organism, and apart from the sentient organism have no independent being." (*Foundations of Belief*, p. 42.)

Then, in the passage already quoted, he argues that, on this view, our perceptions regarded as sources of information, are not merely occasionally inaccurate but habitually mendacious. And a little further on he asks :

"By what possible title can we proclaim the same immediate experience to be right when it testifies to the independent reality of something solid and extended, and to be wrong when it testifies to the independent reality of something illuminated and colored." (P. 113.)

Having captured this position and advanced on one more closely resembling that strengthened and fortified by Huxley, he places a telling shot when he says that—

"It involves a complete divorce between the practice of science and its theory. It is all very well," he continues, "to say that the scientific account of mental physiology in general, and of sense-perception in particular, requires us to hold that what is immediately experienced are mental facts, and that our knowledge of physical facts is but mediate and inferential. Such a conclusion is quite out of harmony with its own premises, since the proposition on which, as a matter of historical verity, science is ultimately founded are not propositions about states of mind, but about material things. . . . So that, if this particular account of the nature of experience be accurate, the system of thought represented by science presents the singular spectacle of a creed which is believed in practice for one set of reasons, though in theory it can only be justified by another ; and which, through some beneficent accident, turns out to be true, though its origin and each subsequent stage in its gradual development are the product of error and illusion."

Finally surveying the ruins of the captured fort, Mr. Balfour exclaims :

"Nothing in the history of speculation is more astonishing, nothing—if I am to speak my whole mind—is more absurd than the way in which Hume's philosophic progeny—a most distinguished race—have, in spite of all their differences, yet been able to agree, *both* that experience is essentially as Hume described it, *and* that from such an experience can be rationally extracted anything even in the remotest degree resembling the existing system of the natural sciences." (Pp. 96, 97.)

I have recalled to the reader's memory these strategic advances of a powerful and avowed enemy to Naturalism as a philosophy, partly with the object of showing that the position in which Huxley entrenched himself was regarded by one who had no narrow and petty cause to fight for, as a position of importance and worth capturing, and partly with a view to indicating that Mr. Balfour's logical projectiles have not pierced or weakened the central citadel of experience. For if there be any truth in the conclusions set forth in the preceding pages, Mr. Balfour has only succeeded in taking outposts which the captains of experience should never have occupied. If he have forced the soldiers of science to fall back upon more tenable ground, and compelled them to defend the co-ordinate reality of the objective and subjective in all their details, he will, in my judgment, have done them a signal service. The position of naturalism will be the stronger for his spirited attack.

By naturalism I here mean a system of knowledge founded on experience in its widest and most comprehensive sense. Within that system experience may be trusted implicitly as far as it goes—and no farther. Although it may occasionally lead to false inferences, it is not habitually inaccurate, still less mendacious. Only when dealing with problems outside its proper sphere does it talk nonsense. It is by no means a complete system of knowledge, but is full of gaps, and ends off in ragged edges. It does not afford an explanation of the universe. Nay, I am prepared to go further and assert that experience does not and cannot furnish a philosophical explanation of anything, its rôle being to describe the past and anticipate the future. It deals with sequences which, under the

appropriate conditions, it finds to be practically invariable. And if it commonly speaks of the causes of events, when it should be content with describing their antecedents, it is but borrowing, consciously or unconsciously, the language of metaphysics. Experience of past sequences enables us to predict the future in similar terms. There its guidance ceases. In presence of the problem of causation it is smitten with the dumbness of agnosticism.

And beyond the babble of experience all is silence! On what men of thought in all ages have regarded as the deepest problems of existence we are to ask no questions, or at any rate are to expect no answers! I, for one, am unable to assent to these propositions. I do indeed contend that the whole edifice of scientific knowledge is securely founded on the realities of experience. If, however, I be asked whether I am content to accept the universe as inexplicable, I have no hesitation in replying that I am not. Behind the sequential realities of experience I believe in a causal reality which makes that experience possible and explicable. But, as Mr. Rudyard Kipling would say, that is another story.

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